

We claim:

1. A process for producing dry powders of one or more carotenoids, which comprises
 - a) suspending one or more carotenoids in an aqueous molecular or colloidal solution of a mixture of trehalose and at least one protein-containing protective colloid and
 - b) converting the suspension which has formed into a dry powder by removing the water and, if appropriate, additionally used solvents and subsequent drying, if appropriate in the presence of a coating material.
2. The process according to claim 1, wherein the suspension prepared in process step a) is ground before conversion into a dry powder.
3. The process according to claim 1, wherein the suspension in stage a) comprises the following steps:
 - a₁) dissolving one or more carotenoids in a water-miscible organic solvent or in a mixture of water and a water-miscible organic solvent or
 - a₂) dissolving one or more carotenoids in a water-immiscible organic solvent and
 - a₃) mixing the solution obtained as in a₁) or a₂) with an aqueous molecular or colloidal solution of a mixture of trehalose and at least one protein-containing protective colloid, resulting in the hydrophobic phase of the carotenoid as nanodisperse phase.

4. The process according to any of claims 1 to 3, wherein casein or a caseinate or mixtures thereof are used as protective colloid.
- 5 5. The process according to any of claims 1 to 4, wherein the carotenoids used are oxygen-containing carotenoids.
- 10 6. The process according to any of claim 5, wherein the oxygen-containing carotenoids are compounds selected from the group consisting of astaxanthin, canthaxanthin, lutein, zeaxanthin, citranaxanthin and ethyl β -apo-8'-carotenoate.
- 15 7. A process for producing an astaxanthin dry powder, wherein
 - a) astaxanthin is dissolved in a water-miscible organic solvent or a mixture of water and a water-miscible organic solvent at temperatures above 30°C,
 - 20 b) the resulting solution is mixed with an aqueous molecular or colloidal solution of a mixture of trehalose with casein or a caseinate or a mixture of trehalose with casein and a caseinate, and
 - 25 c) the suspension which has formed is converted into a dry powder.
- 30 8. The process according to claim 7, wherein a mixture of trehalose and sodium caseinate is used as protective colloid in process step b).
- 35 9. A carotenoid-containing dry powder obtainable by a process as defined according to any of claims 1 to 8.

10. The dry powder according to claim 9 with a carotenoid content of from 0.1 to 40% by weight.
- 5 11. The dry powder according to claim 10, comprising 10 to 25% by weight of astaxanthin.
- 10 12. The use of the carotenoid-containing dry powders as defined according to any of claims 9 to 11 as addition to human foods, pharmaceuticals and/or animal feeds.

Method for producing dry powders of one or several carotenoids

Abstract

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The invention relates to a process for producing dry powders of one or more carotenoids, which comprises

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a) suspending one or more carotenoids in an aqueous molecular or colloidal solution of a mixture of trehalose and at least one protein-containing protective colloid and

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b) converting the suspension which has formed into a dry powder by removing the water and, if appropriate, additionally used solvents and subsequent drying, if appropriate in the presence of a coating material.